Documenting Folk Science

Solega honeybee knowledge as a case study

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Topics covered

- Honey(bees) in Solega culture
- Methods – documenting knowledge of honeybee biology
- Problems of delimitation
- Solega knowledge of honey reproduction


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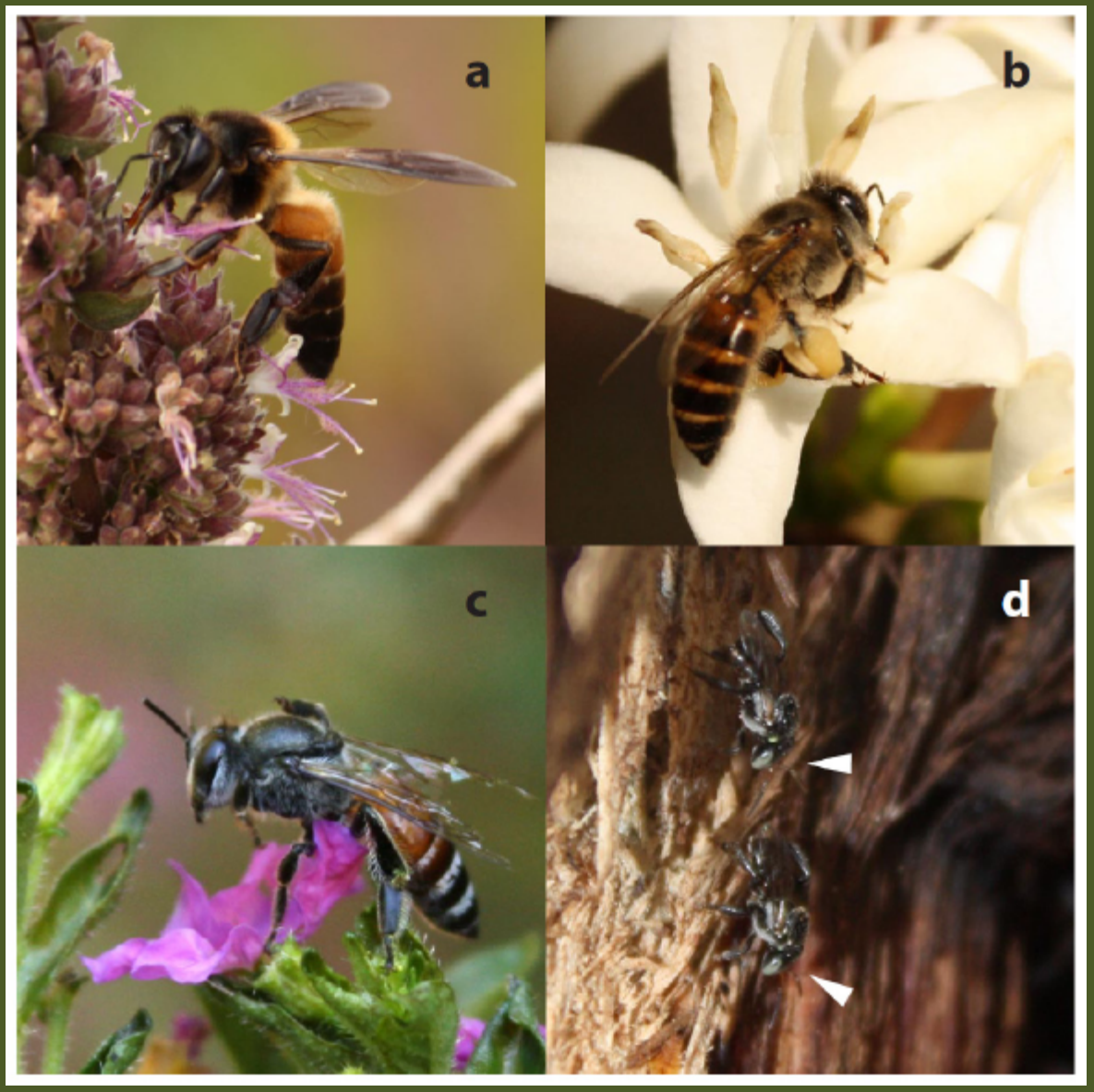
Honeybees in Solega culture

- Honey harvested from four bee species
- Important seasonal activity
- Drinking honey is good for health; medicinal honeys
- Folktales, ritual song cycle, harvest songs
- Use of honey in rain-making ritual
- Honey sold via a co-operative (*Adivasi Abhivruddhi Sangha*), assisted by NGOs ATREE and VGKK



a. *hejje:nu (Apis dorsata)*

b. *tuduve je:nu (A. cerana)*

c. *kaddi je:nu (A. florea)*

d. *nesari je:nu (Trigona iridipennis)*

METHODS

Methods

- "Stage 1" random bits of information

  maruli hu:vina je:nu bandа:de

  "The honey from the *maruli* flower is delicious!"

  je:nu ille, biri mudiye

  "There's no bees/honey here, it's just a *mudi*!"

Methods

- "Stage 2" focused questions (multiple consultants)

  "Are there different kinds of honey?"

  "What do you call the different parts/stages of a honeycomb?"

  "Are there different kinds of bees in a colony? Can you describe their behaviours?"

  "Where do you usually go to harvest honey?"

Honey	Physical Property
matti hu:vina je:nu	crystallizes quickly (*je:nu sakkare*)
ne:ri hu:vina je:nu	thick
honne hu:vina je:nu	watery
bende hu:vina je:nu	watery
manasi:ge hu:vina je:nu	crystallizes quickly (*je:nu sakkare*)
nesari je:nu	runny, sour, medicinal

Comb stage/ part	Description
(h)a:le	new comb (yellow)
bella:le	new comb (white)
u:te	comb with little honey
eralu	brood comb
tale	upper part of comb, honey store
ra:de	comb (general); part of comb without honey
mudi	colony just arrived at new nest site
ittu kodani je:nu	pollen-bearing comb
ta:vilu	comb with drone cells

- Types of bees: *ra:ni* (queen), *kunni* (‘girl’ (workers)), *kurudu nona* (‘deaf flies’ (drones))

- “Bee trees” – regularly inhabited by honeybees every year, prober names.
  - *e.g. do:vu ma:vu ba:ge*

    basapanna kaḍavina aranelli

    dodda kollada aranelli

    jo:du turuve

Methods

- "Stage 3" recorded interview/conversation for archiving

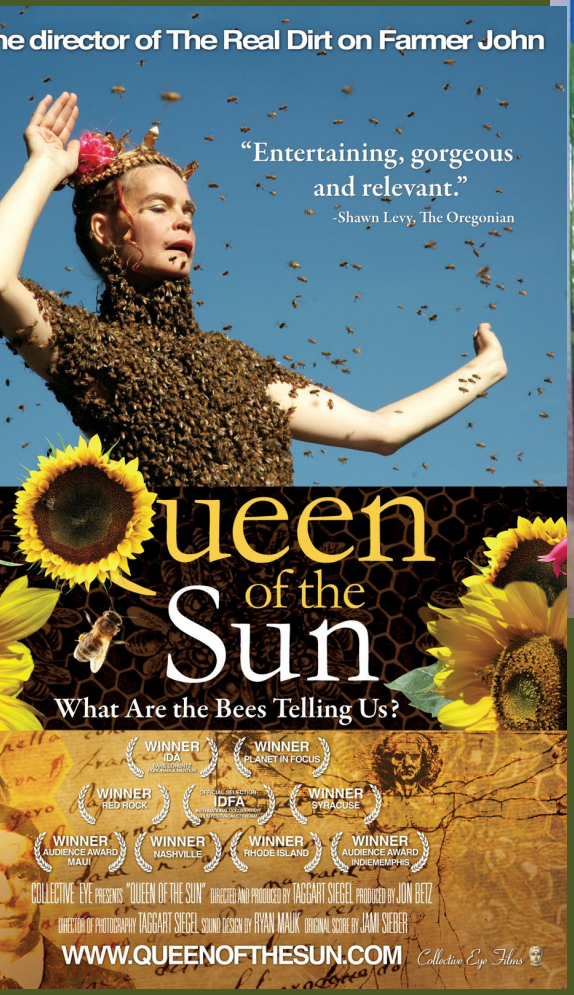
"If you keep going upstream of *sikka sampage*, you'll find an *aravilu kende* tree. About twenty colonies come to that tree…It's a tree that's right below *aravilu* hill. It's growing out of a rock platform.

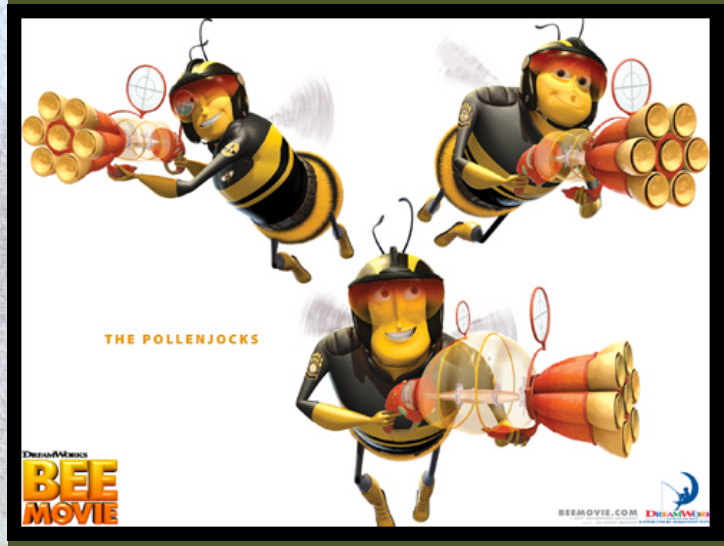
Next, you can go uphill from *sikka sampage.* There you will see a *tekke soravilu* tree. About twenty bee colonies come to that tree…If you walk a bit to the right from that tree, you get to *iṭṭu bu:di* – two or three *soravilu* trees grow there too. Bees nest there...

When you go up to the road from there, to *kambaḷi gadde* forest, you find the *jo:ḍu* [twin/joint] *turuve* trees. We harvest from the *jo:ḍu turuve*. *Jo:ḍu turuve* means the road goes in between, there's a tree on one side, and a tree on another. We call those two trees the *jo:ḍu turuve*."

Problems of delimitation

- What can be left out?
  - non-culturally-relevant information
  - information from sources outside the speech community
- What should be included?
  - hard-to-observe phenomena
  - ‘new and exciting’ vs. ‘old and commonplace’





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Massacre in the hive: Amazing footage of 30 giant Japanese hornets slaughtering 30,000 tiny honeybees to eat their young

By GAVIN ALLEN
UPDATED: 16:54 GMT, 13 January 2012

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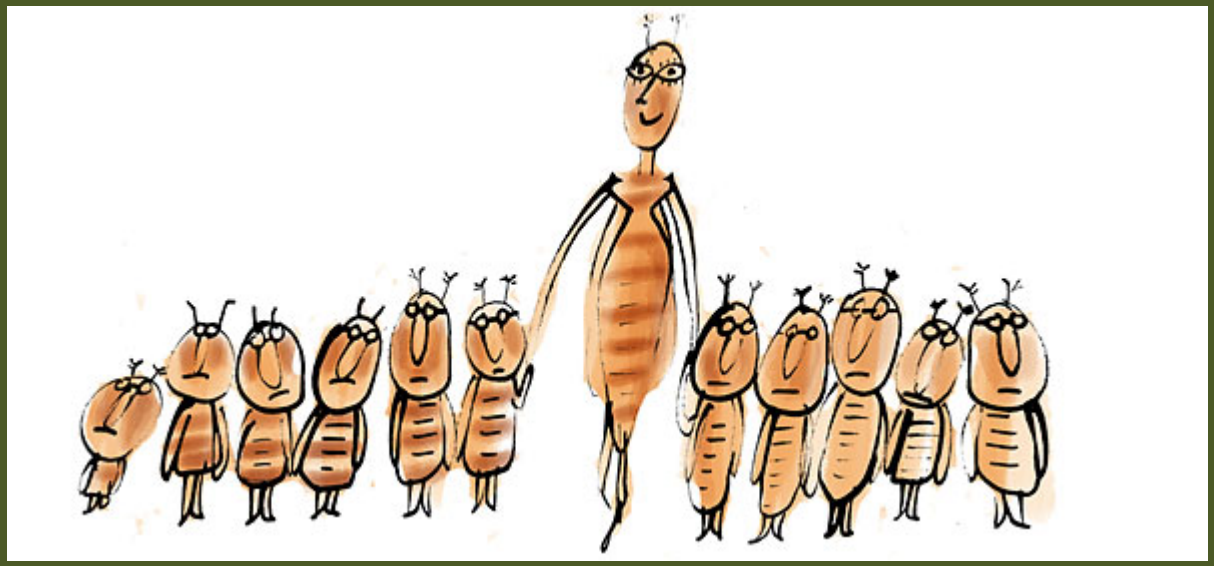
Tens of thousands are dead, hundreds more of the dying lie writhing on the battlefield, powerless to protect their children.

These horrifying and yet fascinating scenes are the highlights of a three-hour battle between just 30 giant Japanese hornets and 30,000 European honeybees.

The video, from a National Geographic documentary called Hornets From Hell, shows a full-scale attack on the honeybees' comb in order that the hornets can get at their larvae.

See the video below...

In Hollywood Hives, the Males Rule



"The male honeybee's form bespeaks his sole function. He has large eyes to help find queens and extra antenna segments to help smell queens, but he is otherwise ill-equipped to survive. On reaching adulthood, he must linger in the hive for a few days until his exoskeleton dries and his wing muscles mature, all the while begging food from his sisters and thus living up to his tainted name, drone."

New York Times, Science section, November 13, 2007

The origin of honey

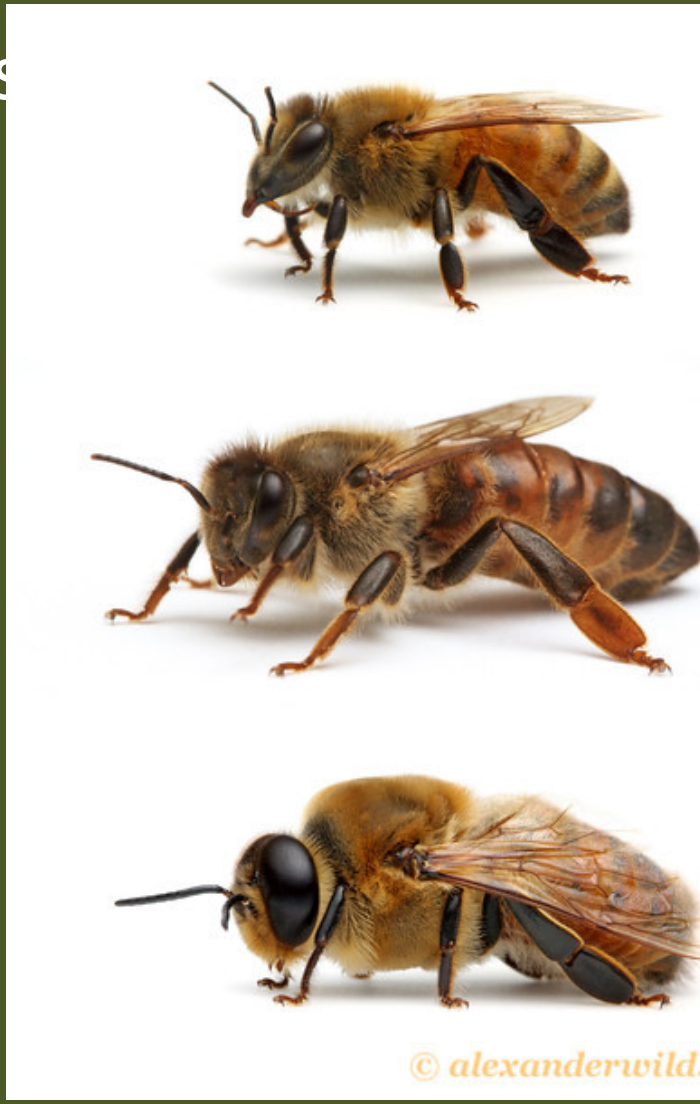
…honey is distilled from dew, and is deposited chiefly at the risings of the constellations or when a rainbow is in the sky: and as a general rule there is no honey before the rising of the Pleiads.

The bee, then, makes the wax from flowers. The honey, however, it does not make, but merely gathers what is deposited out of the atmosphere;

...in autumn flowers are found, but honey, if it be withdrawn, is not replaced; now, after the withdrawal of the original honey, when no food or very little is in the hives, there would be a fresh stock of honey, if the bees made it from flowers. **(Aristotle, *History of Animals,* V: 22)**

Honeybee reproduction – the science

- Mated queen lays fertilised eggs → female workers
- Also lays unfertilised eggs → male drones
- Also produces new queens → swarming
- In an anarchic hive, workers → unfertilised eggs → drones
  - leads to death of the colony



Honeybee reproduction - Aristotle

The generation of bees is a great puzzle…either (i) each kind generates its own kind, or (ii) one of the three kinds generates the others, or (iii) one kind unites with another kind (*Generation of Animals*, Book III: 10).

Honeybee reproduction – the Solega version

- Types of bees: *ra:ni* (queen), *kunni* (‘girl’ (workers)), *kurudu nona* (‘deaf flies’ (drones))

Ra:ṇi noṇa andare, adu ondu ta:yi tara je:nugaḷige…adu jopa:na:gi no:ḍkoḷḷutte, adu ashṭu huḷa iruttella, ashṭu huḷa adu biṭṭu koḍalla, ella huḷa ue no:ḍkoḷḷutte.

As for the queen bee, she’s like a mother for all the bees…she looks after them carefully. However many bees there are, she never leaves them, she looks after all of them.

Honeybee reproduction – the Solega version

Uḷukka murtu uḍtade, tikadalliye, tiguṭeli. A: uḷukka murtu uḍtade enda:ga, adaralli innondu uḷukku ille, adave kuruḍu noṇa. Visa kaḷadu uḍtade.

The sting breaks off, from its (the worker's) bottom. When the sting breaks off, it does not have another sting – that's how it becomes a drone. It loses its poison.

Honeybee reproduction – the Solega version

Ma:muli noṇada mari ma:muli noṇada mariya:gi huṭṭidde… je:nu gu:ḍu kaṭṭida:ga ra:ṇi adaralli moṭṭe iṭṭurutte. Ra:ṇi moṭṭe iṭṭa:ga a: tara mari a:godde.

The young of ordinary bees turn into ordinary bees (like their parents)… when a (new) hive is built, the queen lays eggs in it. The queen's eggs hatch into queens just like her.

Other aspects of honeybee biology

- Long-distance foraging
- Nocturnal foraging
- Scouting of new nest sites
- Possible subspecies?

Thank you!

- The people of the BR Hills – MR Madha, Keredimba Basavegowda, Nanjegowda, Nagendra P, Jadeya, Javana, Ketegowda, C. Madegowda
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